

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims:

Claims 1-7 (Canceled)

8. (Currently Amended) An emission abatement device comprising:

a housing,

a tube positioned in the housing to define an outer passageway ~~therebetween~~ between the housing and the tube and that defines an inner passageway,

a hydrocarbon trap positioned in the outer passageway,

a 3-way catalyst in the housing positioned downstream from the hydrocarbon trap,
[[and]]

a valve movable between (i) a closed position to block passage of exhaust gas through the tube-inner passageway to force the exhaust gas into the outer passageway to pass through the hydrocarbon trap to the 3-way catalyst and (ii) an opened position to allow passage of exhaust gas to the 3-way catalyst through the outer passageway and the hydrocarbon trap and through the tube-inner passageway, and

wherein, the 3-way catalyst is spaced along an axis of the housing apart from the hydrocarbon trap and the tube, to define a chamber that is located in the housing between the 3-way catalyst and both the hydrocarbon trap and the tube, and that connects the outer and inner passageways with the 3-way catalyst to conduct exhaust gas from the outer and inner passageways through the chamber to the 3-way catalyst, and

wherein, the hydrocarbon trap is spaced apart from the tube to define a gap therebetween.

9. (Canceled)

10. (Original) The emission abatement device of claim 8, wherein the housing and the tube define an outer outlet opening to discharge exhaust gas from the outer passageway, and the tube defines an inner outlet opening to discharge exhaust gas from the inner passageway.

11. (Original) The emission abatement device of claim 8, comprising a controller operable to position the valve in the closed position for a predetermined period of time.

12. (Original) The emission abatement device of claim 8, comprising a controller operable to move the valve from the closed position to the opened position upon expiration of a predetermined period of time.

13. (New) The emission abatement device of claim 8, wherein:
the housing comprises a first sleeve and a second sleeve secured to the first sleeve,
the tube is positioned in the first sleeve,
the hydrocarbon trap is positioned in the first sleeve between the first sleeve and the tube,
and
the 3-way catalyst is positioned in the second sleeve outside of the tube.

14. (New) The emission abatement device of claim 13, wherein the chamber is defined by the second sleeve.

15. (New) The emission abatement device of claim 13, wherein the housing comprises an inlet cone and an outlet cone, the inlet cone is secured to the first sleeve, and the outlet cone is secured to the second sleeve.

16. (New) The emission abatement device of claim 8, wherein the housing comprises a sleeve, the tube is positioned in the sleeve, the hydrocarbon trap is positioned in the sleeve between the sleeve and the tube, the 3-way catalyst is positioned in the sleeve outside of the tube, and the chamber is defined in the sleeve between the 3-way catalyst and both of the hydrocarbon trap and the tube.

17. (New) The emission abatement device of claim 8 further comprising a first retainer positioned between the hydrocarbon trap and the tube to space the hydrocarbon trap apart from the tube.

18. (New) The emission abatement device of claim 17 further comprising a second retainer positioned between the hydrocarbon trap and the tube to space the hydrocarbon trap apart from the tube.

19. (New) The emission abatement device of claim 18, wherein the first retainer is located at a first end of the hydrocarbon trap, and the second retainer is located at a second end of the hydrocarbon trap.

20. (New) The emission abatement device of claim 8, wherein the outer passageway is annular.